Choose ?

1. **The levers were first described by ………**

A Newton	B Mendel	C Archemides	D Edison

2. **…………… class levers are the most common levers in our daily life.**

A First	B Second	C Third	D Fourth

3. **The lever rotates around a fixed point is called …………**

A Resistance force	B Effort force	C Fulcrum	D A rigid bar

4. **The ……………. Is exerted by a person to equilibrate the resistance.**

A Effort force	B Resistance force	C Fulcrum	D Friction

5. **………….. is a lever that is used to increase the force.**

A Tweezers	B Hockey bat	C Manual broom	D Crowbar

6. **……………. is used to pick up very small objects.**

A Hockey bat	B Crowbar	C Seesaw	D Tweezers

7. **…………….. is used to increase the speed of the object.**

A Manual broom	B Crowbar	C Coal tongs	D Hockey bat

8. **……………….. is used to avoid dangers.**

A Crowbar	B Coal holder	C Seesaw	D Nutcrackers

9. **……………. Is used to enlarge the moved distance.**

A Seesaw	B Hockey bat	C Manual broom	D Tweezers

10. **………. is used to move force from one place to another.**

A Pincers	B broom	C Tweezers	D Nutcracker

11. **The ………. class lever has the fulcrum in the middle between resistance and effort force.**

A First	B Third	C Second	D Fourth

12. **In second class levers, ……………. is the middle point.**

A Resistance	B Effort force	C Fulcrum	D Rigid bar

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13. .... has resistance force in the middle between fulcrum and effort force.

A Broom B Crowbar C Nutcracker D Seesaw

14. .... class levers have force in the middle between fulcrum and resistance.

A First B Second C Third D Fourth

15. .... has effort force in the middle between fulcrum and resistance.

A Coal holder B Water pump C Pliers D Wheelbarrow

16. All of these are from the second-class levers except ....

A Wheelbarrow B Crowbar C Nutcracker D Bottle opener

17. .... Is from the third class levers.

A Crowbar B Seesaw C Ice holder D Nutcracker.

18. .... has effort force in the middle between fulcrum and resistance.

A Nutcracker B Wheelbarrow C Crowbar D Hockey bat

19. All of the following are from the third class levers except ....

A Broom B Hook C Paddle D Tweezers

20. Soda opener is a .... class lever.

A First B Third C Second D Third

21. .... is a first class lever.

A Fishing hook B wheelbarrow C Scissors D Bottle opener

22. .... composes of two second levers.

A Wheelbarrow B Scissors C tweezers D Coal holder

23. Wheelbarrow is from the .... class levers.

A First B Second C Third D Fourth

24. Nail clipper is from the .... class levers.

A First B Second C Third D Fourth

25. .... consists of two first class levers.

A Scissors B Tweezers C Coal tongs D Nutcracker

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26. Sweet holder is a ……….. class lever.

A First B Second C Third D Fourth

27. All of these are from the first class levers except ………….

A Crowbar B Scale C Scissors D Wheelbarrow

28. All of the follow from the importance of levers except …………..

A Increase distance B Increase force C Decrease force D Avoid dangers

29. Pincers are considered as …………. class lever.

A First B Second C Third D Force

30. ……………… composes of two third class levers.

A Coal holder B Crowbar C Broom D Hockey bat

31. …………. is from the first class levers.

A Wheelbarrow B Broom C Fishing hook D Hammer claw

32. There are ……….. types of levers.

A Four B Two C Three D One

33. Fishing tool is from the ……… class levers.

A First B Second C Third D Fourth

34. The force arm may equal to the resistance arm in the ……………. Class levers.

A First B Second C Third D Fourth

35. Force × its arm = Resistance × its arm, is the law of ………….

A Energy B Force C Levers D Electricity

36. ……………… is an example of the first class levers.

A Scissors B Wheelbarrow C Manual broom D Tweezers

37. ……………… is a lever that conserves effort.

A Fishing tool B Wheelbarrow C Sweetholder D Scissors

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38. .... is a lever which saves effort.

A Scissors | B Nutcracker | C Coal holder | D Hockey bat

39. .... Is a first class lever that saves effort.

A Nutcracker | B Wheelbarrow | C Scissors | D Crowbar

40. The force arm is always longer than resistance arm in .... class levers.

A First | B Second | C Third | D Fourth

41. The length of resistance arm in a second class lever is 15 cm, so its force arm may equal ...

A 12 cm | B 10 cm | C 15 cm | D 20 cm

42. Levers of .... class, sometimes conserve effort.

A First | B Second | C Third | D Fourth

43. .... is an example for a second class lever.

A Sensitive balance | B Coal holder | C Wheel barrow | D Hockey bat

44. A lever where resistance lies between, effort force and fulcrum is ....

A Nutcracker | B Scissors | C Sweet holder | D Broom

45. .... Is an example of lever where its force arm equals the resistance arm.

A Tweezers | B Crowbar | C Scissors | D Nutcracker

46. .... is the force resulting from the weight of the body we want to move.

A Fulcurm | B Effort force | C Resistance force | D Rigid bar

47. The effort force may equal the resistance force in .... class levers.

A First | B Second | C Third | D Fourth

48. When the force arm equals resistance arm, the resistance is .... The effort force.

A More than | B Less than | C Equal to | D double

49. The lever saves effort, when effort force is .... the resistance.

A Smaller than | B Bigger than | C Equal to. | D half

50. …………… class levers always don't conserve effort.

A First B Second C Third D Fourth

51. …………. doesn't save effort.

A Hokey bat B Wheelbarrow C Bottle opener D Crowbar

52. The lever conservers effort when the force arm is …….. the resistance arm.

A Smaller than B Longer than C Equal to D Less than

53. The distance between the resistance force and fulcrum is known as the arm of ……….

A Force B resistance C Fulcrum D Lever

54. If the length of a second class lever bar is 20 cm, so its resistance arm equals ……cm.

A 10 B 20 C 15 D 40

55. The first simple machines man invented were ……….

A Bikes B Cars C Planes D Levers

56. The force arm is always longer than resistance arm in ……….. class levers.

A First B Second C Third D Fourth

57. The resistance arm is longer than the force arm in the …………..

A Scissors B Nutcracker C Wheelbarrow D Manual broom

58. The fishing hook is considered as a …………. class lever.

A First B Second C Third D Fourth

59. ………………… Is a first class lever.

A Paddle B Manual broom C Nutcracker D Crowbar

60. ……………….. conserves effort.

A Fishing hook B Soda opener C Balance D Coal holder

61. ……………. class levers always have mechanical benefit.

A First B Second C Third D Fourth

62. When the force arm is longer than resistance arm, the effort force is .... resistance.

A Larger than B Smaller than C Double D Equal to

63. When the arm force is half resistance force, the effort force is .... the resistance.

A Double B Half C Equal to D Quarter

64. The .... is the measuring unit of effort force.

A Metre B Centimetre C Newton D Gram

65. When force × its arm = 20, so resistance equals .... if the resistance arm is 2 cm.

A 20 newton B 40 newton C 18 newton D 10 newton

66. The force that is exerted to equilibrate the resistance is called ....

A Fulcrum B Effort force C Friction D Resistance arm

67. .... is used to pick up very small objects.

A Coal holder B Tweezers C Manual broom D Seesaw

68. .... is/are an example of the third class levers.

A Scissors B Sweet holder C Seesaw D Nutcracker

69. In the levers, the rigid bar is affected by .... forces.

A Two B Three C Four D No

70. Nail clippers are from the .... class levers.

A First B Second C Third D Fourth

71. To move a heavy stone, we use ....

A Crowbar B Wheelbarrow C Pliers D Scissors

72. The effort force and the resistance force are measured in ....

A Newton B Hertz C Metre D Cubic centimetre

73. In hockey bat, the effort arm is .... the resistance arm.

A Longer than B Shorter than C Equal to D More than

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74. When the arm of force is longer than the arm resistance, the effort is ……… the resistance.

A Larger than B Smaller than C Equal to D Double

75. The force arm is sometimes equal to the resistance arm in the …………… class lever.

A First B Second C Third D Fourth

76. The lever that has the between the force and resistance is ………

A Soda water opener B Wheelbarrow C Ice holder D Seesaw

77. All the following are levers that save effort except the ………………..

A Crowbar B Wheelbarrow C Nutcracker D Sweetholder

78. ……………… is/are considered first class lever.

A Wheelbarrow B Pliers C Manual broom D Nutcracker

79. ………………. is a lever that saves effort.

A Scissors B Nutcracker C Sweet holder D Coal holder

80. The resistance is between the force and fulcrum in the …………… class lever.

A First B Second C Third D Fourth

81. ……………… is an example is from the second class levers.

A Seesaw B Wheelbarrow C Sweetholder D Crowbar

80. ………………. is the lever that increases speed.

A Hockey bat B Manual broom C Nut cracker D Crowbar

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1- In a lever, the ______ force is the force applied by the user to equilibrate the ______ force.

a- Effort; resistance

b- Resistance; effort

c- Gravitational; effort

d- Effort; gravitational

2- Which of the following is the fixed point that a lever rotates around?

a- Resistance force

b- Effort force

c- Fulcrum

d- No correct answer

3- Which of the following is true about levers?

a- Some levers increase the force applied by the user.

b- They can give us greater accuracy in performance.

c- They can increase the speed of a moving object.

d- All of the answers are correct

4- A ___ and a ____ are examples of levers that increase the size of the force applied.

a- Broom; crowbar

b- Nutcracker; crowbar

c- baseball bat; nutcracker

d- pair of tweezers; broom

5- All levers consist of three main features. What are these?

a- A resistance force; a handle, and a weight force

b- An effort force; a resistance force, and a fulcrum

c- An effort force; a resistance force, and a weight force

d- A resistance force; a fulcrum, and a handle

6- The manual broom_____

a- increases distance

b- moves the force

c- helps us avoid dangers

d- increases force

7- ______Is an example of the second class levers.

a- nutcracker

b- Seesaw

c- fishing tool

d- no correct answer

8- Force x its arm = Resistance x its arm is the law of______

a- energy

b- electricity

c- levers

d- no correct answer

9- Coal holder is considered as a lever because it ________

a- decreases effort

b- increases effort

c- helps to avoid dangers

d- increases speed

10- Nail clipper is an example of__________

a- first class lever

b- Second class lever

c- third class lever

d- no correct answer

11- levers were first described by _____

a- Edison

b- Archimedes

c- Al- Hassan-Ibn Al- Haitham

d- No correct answer

12-One of the following levers transfer force from one place to another ______

a- Manual broom

b- Nutcracker

c- Wheel barrow

d- No correct answer

13-The _____ has the force between resistance and fulcrum.

a- Nut cracker

b- Tweezers

c- Seesaw swing

d- No correct answer

14-First class levers are different from second class levers in the ____

a- Sweet holder

b- Presence of fulcrum

c- Position of the fulcrum

d- No correct answer

15-One of the following is a second class lever ____

a- Sweet holder

b- Wheel barrow

c- Seesaw swing

d- No correct answer

16-The fixed point which the lever rotates around_____

a- Fulcrum

b- Effort force

c- Resistance force

d- No correct answer

17-The force exerted by a person to equilibrate the resistance.

a- Resistance force

b- Arm of force

c- Effort force

d- No correct answer

18-The force that results from the weight of the body that we want to move is ______

a- Effort force

b- Resistance force

c- Arm of force

d- No correct answer

19-The distance between the effort force and the fulcrum

a- Arm of force

b- Arm of resistance

c- Fulcrum

d- No correct answer

20- The distance between the resistance and the fulcrum

a- Arm of force

b- Arm of resistance

c- Fulcrum

d- No correct answer

21- The levers in which the fulcrum lies between the effort force and the resistance.

a- Third class levers

b- Second class levers

c- First class levers

d- All the answers are correct

22- The levers in which the resistance lies between the effort force and the fulcrum.

a- Third class levers

b- Second class levers

c- First class levers

d- All the answers are correct

23- The levers in which the effort force lies between the resistance and the fulcrum.

a- Third class levers

b- Second class levers

c- First class levers

d- All the answers are correct

24- What is the function of tweezers?

a- To move a heavy load using a small force

b- To increase accuracy in performance

c- To move an object by a great distance

d- No correct answer

25- What is the resistance force in a lever?

a- A fixed point that the bar rotates around

b- The force applied by the person using the lever

c- The force that acts in the opposite direction to the effort force

d- No correct answer

26- How are levers classified?

a- According to the size of the lever

b- According to the positions of the fulcrum, the effort force, and the resistance force

c- According to the size of the force applied to the lever

d- All of the answers are correct

27- A third-class lever has the ____ in between the ___ and the fulcrum.

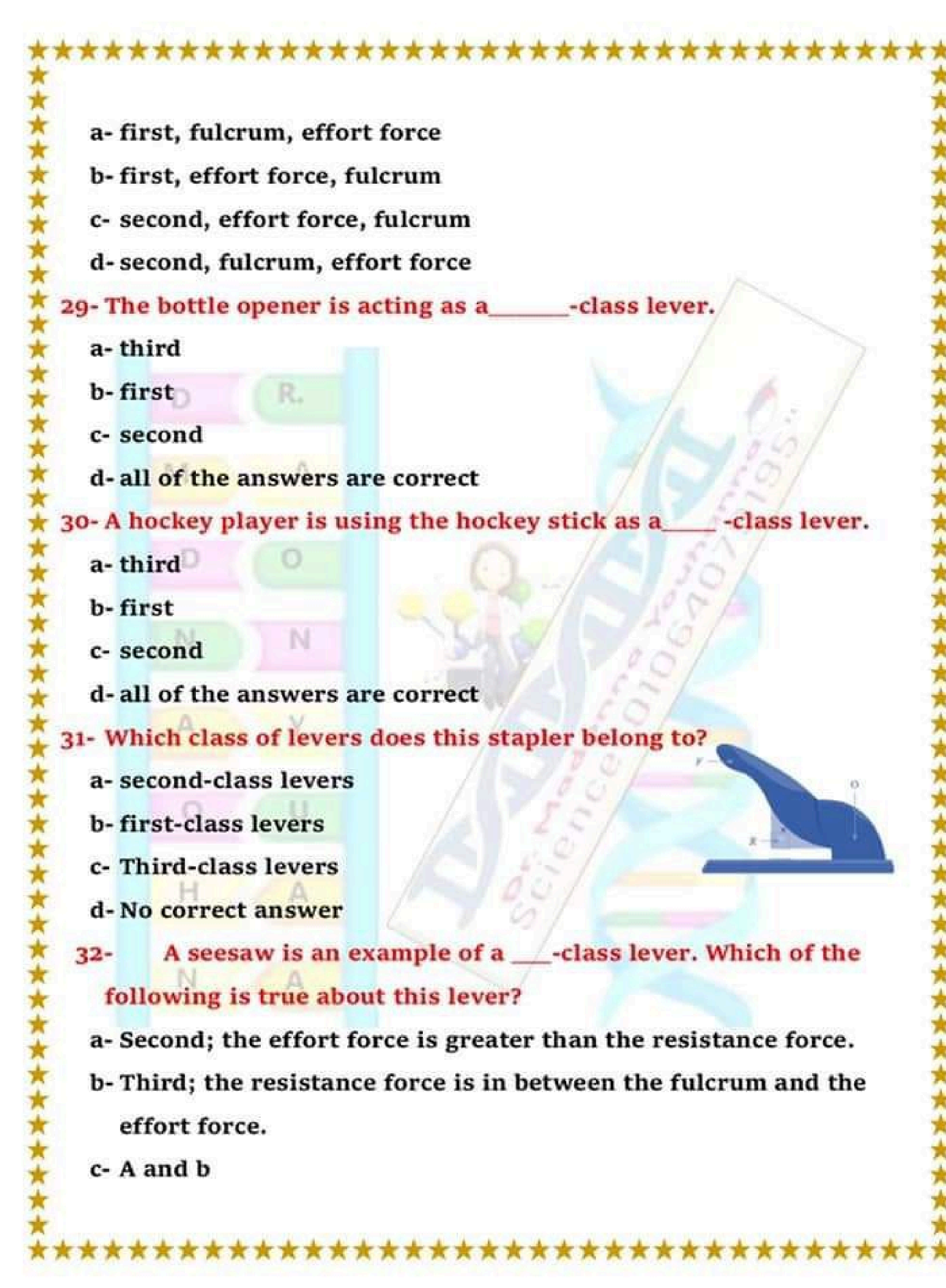
a- effort force, resistance force

b- resistance force, effort force

c- a and b

d- no correct answer

28- In a ____-class lever, the____ lies between the____ and the resistance force.



a- first, fulcrum, effort force

b- first, effort force, fulcrum

c- second, effort force, fulcrum

d- second, fulcrum, effort force

29- The bottle opener is acting as a______-class lever.

a- third

b- first

c- second

d- all of the answers are correct

30- A hockey player is using the hockey stick as a____ -class lever.

a- third

b- first

c- second

d- all of the answers are correct

31- Which class of levers does this stapler belong to?

a- second-class levers

b- first-class levers

c- Third-class levers

d- No correct answer

32- A seesaw is an example of a ___-class lever. Which of the following is true about this lever?

a- Second; the effort force is greater than the resistance force.

b- Third; the resistance force is in between the fulcrum and the effort force.

c- A and b

d- First; the fulcrum is in between the resistance force and the effort force.

33- Which of the following is the definition of the effort force arm (force arm)?

a- It is the distance between the effort force and the resistance force.

b- It is the distance between the effort force and the fulcrum.

c- It is the distance between the resistance force and the fulcrum.

d- No correct answer

34- Which arrow in the diagram shows the resistance arm?



a- 1

b- 2

c- 3

d- No correct answer

35- Effort force and ______ are measured in______

a- resistance force, newton

b- the effort force arm, centimeters

c- the effort force arm, newton

d- resistance force, centimeters

36- A force of 40 N is applied to a second-class lever. The force arm is 10 cm. Given that the resistance arm is 5 cm, calculate the resistance force.

a- 55 N

b- 40 N

c- 8 N

d- 80 N

37- Which of the following levers has the force between the resistance and fulcrum?

a- Nutcracker

b- Scissors

c- Sweet holder

d- No correct answer

38- Miss Madonna investigated how the effort force changed when she attached 3 different objects to a lever. Each time, the lever was balanced. When the resistance arm is shorter than the effort arm, the effort force is _____the resistance force. When the effort arm is_____ the resistance arm, the effort force is larger than the resistance force.

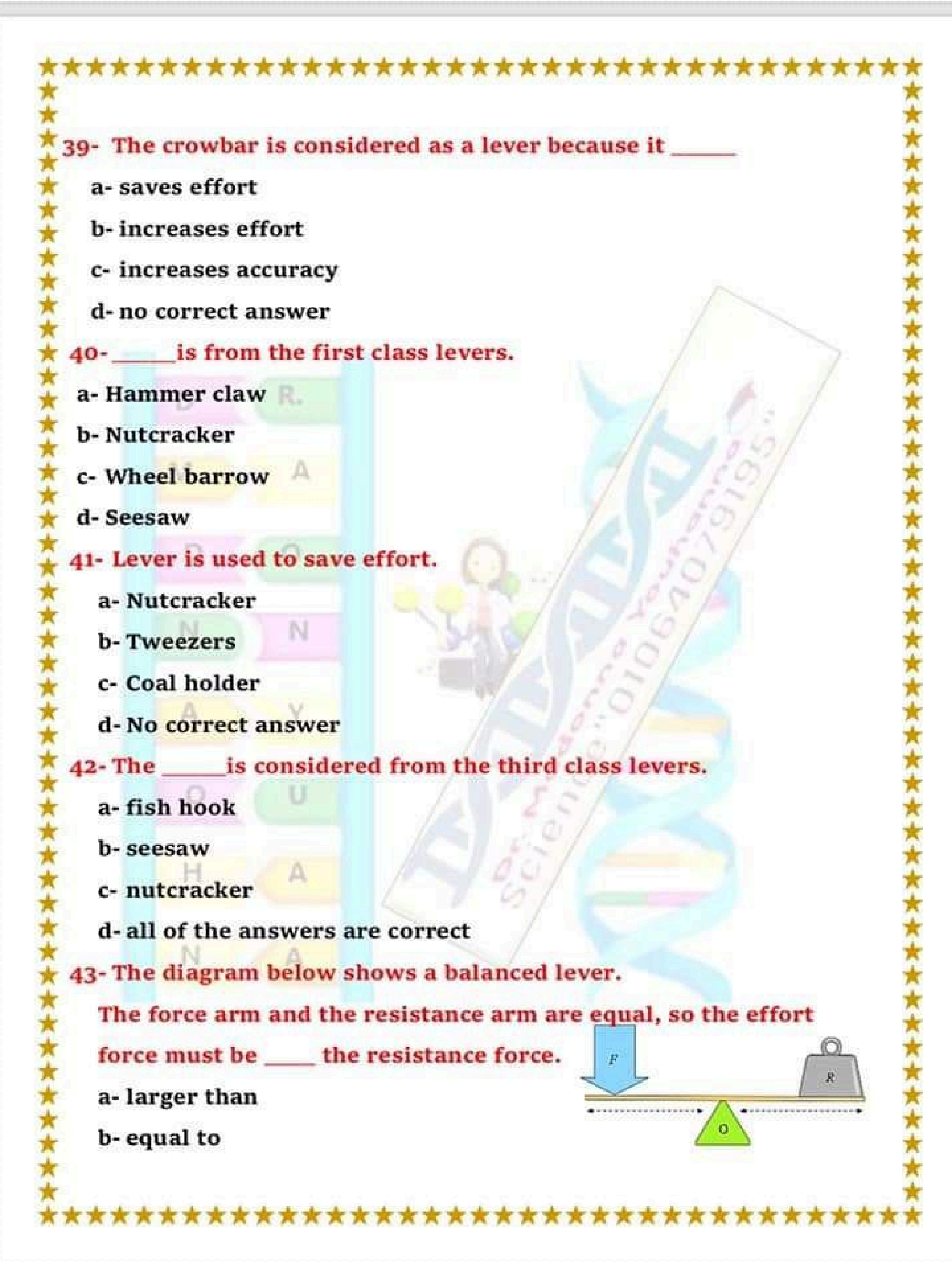
Object	Effort Force (N)	Force Arm (cm)	Resistance Force (N)	Resistance Arm (cm)	Effort Force × Force Arm	Resistance Force × Resistance Arm
1	50	20	50	20	1000	1000
2	35	20	70	10	700	700
3	75	10	25	30	750	750

a- equal to; equal to

b- Smaller than; shorter than.

c- Larger than; longer than.

d- No correct answer.



39- The crowbar is considered as a lever because it _____

a- saves effort

b- increases effort

c- increases accuracy

d- no correct answer

40- _____is from the first class levers.

a- Hammer claw

b- Nutcracker

c- Wheel barrow

d- Seesaw

41- Lever is used to save effort.

a- Nutcracker

b- Tweezers

c- Coal holder

d- No correct answer

42- The _____is considered from the third class levers.

a- fish hook

b- seesaw

c- nutcracker

d- all of the answers are correct

43- The diagram below shows a balanced lever.

The force arm and the resistance arm are equal, so the effort force must be ____ the resistance force.

a- larger than

b- equal to

c- smaller than

d- no correct answer

44- Second-class levers always have a mechanical advantage because the force arm is longer than the resistance arm. Why is the force arm always longer than the resistance arm?

a- Because the effort force is always smaller than the resistance force

b- Because the force arm is measured from the fulcrum but the resistance arm is measured from the effort force

c- Because, in a second-class lever, the resistance force is in between the fulcrum and the effort force

d- All of the answers are correct

45- _____ third-class levers have mechanical advantage because the force arm is always _____ than the resistance arm. This means that the effort force is always ____ than the resistance force.

a- All, longer, smaller

b- No, shorter, larger

c- All, shorter, larger

d- No, longer, smaller

46- Tweezers are an example of third-class levers. Although they have_____ mechanical advantage, they are still useful because they_______ .

a- some, can move a heavy load using a small force

b- some, increase accuracy in performance

c- no, increase accuracy in performance

d- no, can move a heavy load using a small force

47- Why does the second-class lever shown below have a mechanical advantage?

a- Because the resistance arm is very long

b- Because all levers have a mechanical advantage

c- Because the force arm is longer than the resistance arm

d- No correct answer

48- The force is between the resistance and fulcrum is _____

a- Nutcracker

b- Scissors

c- Sweet holder

d- All of the answers are correct

49- ____ is considered from third class levers.

a- Manual broom

b- See-saw

c- Nutcracker

d- All of the answers are correct

50- In _____ class levers, the resistance lies between fulcrum and effort force.

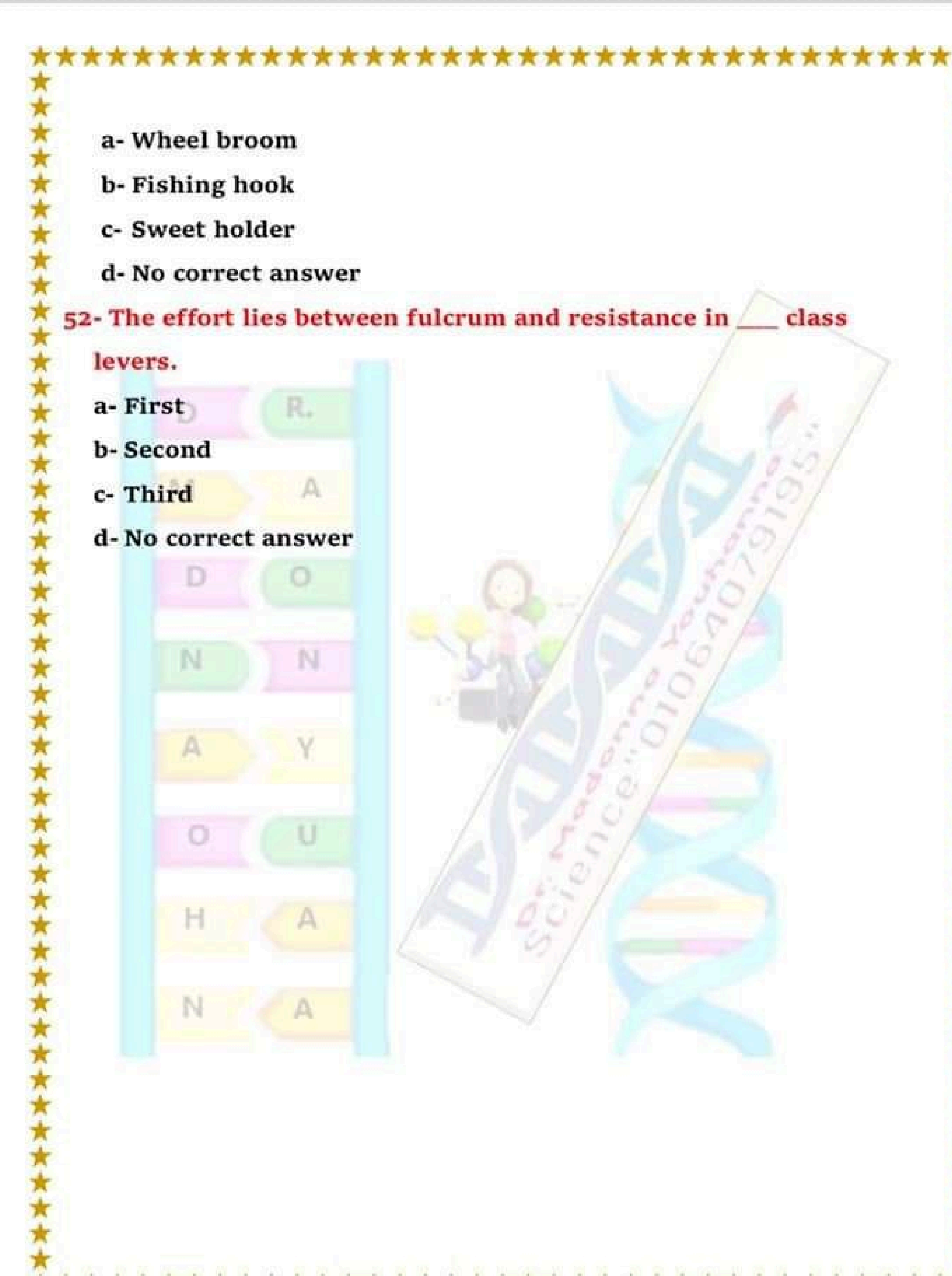
a- First

b- Second

c- Third

d- All of the answers are correct

51- All of the following levers are third class levers except____



a- Wheel broom

b- Fishing hook

c- Sweet holder

d- No correct answer

52- The effort lies between fulcrum and resistance in ___ class levers.

a- First

b- Second

c- Third

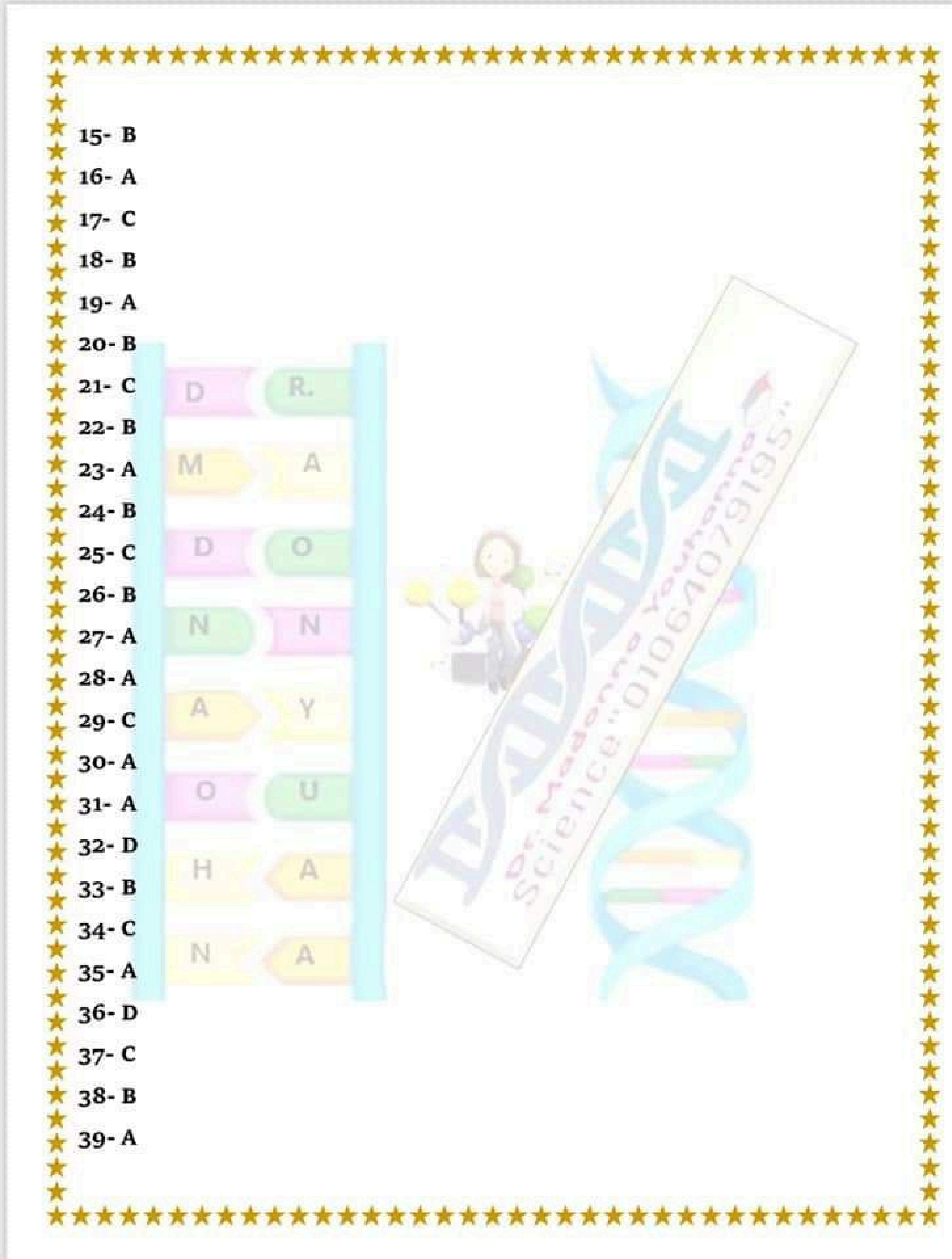
d- No correct answer

Part one

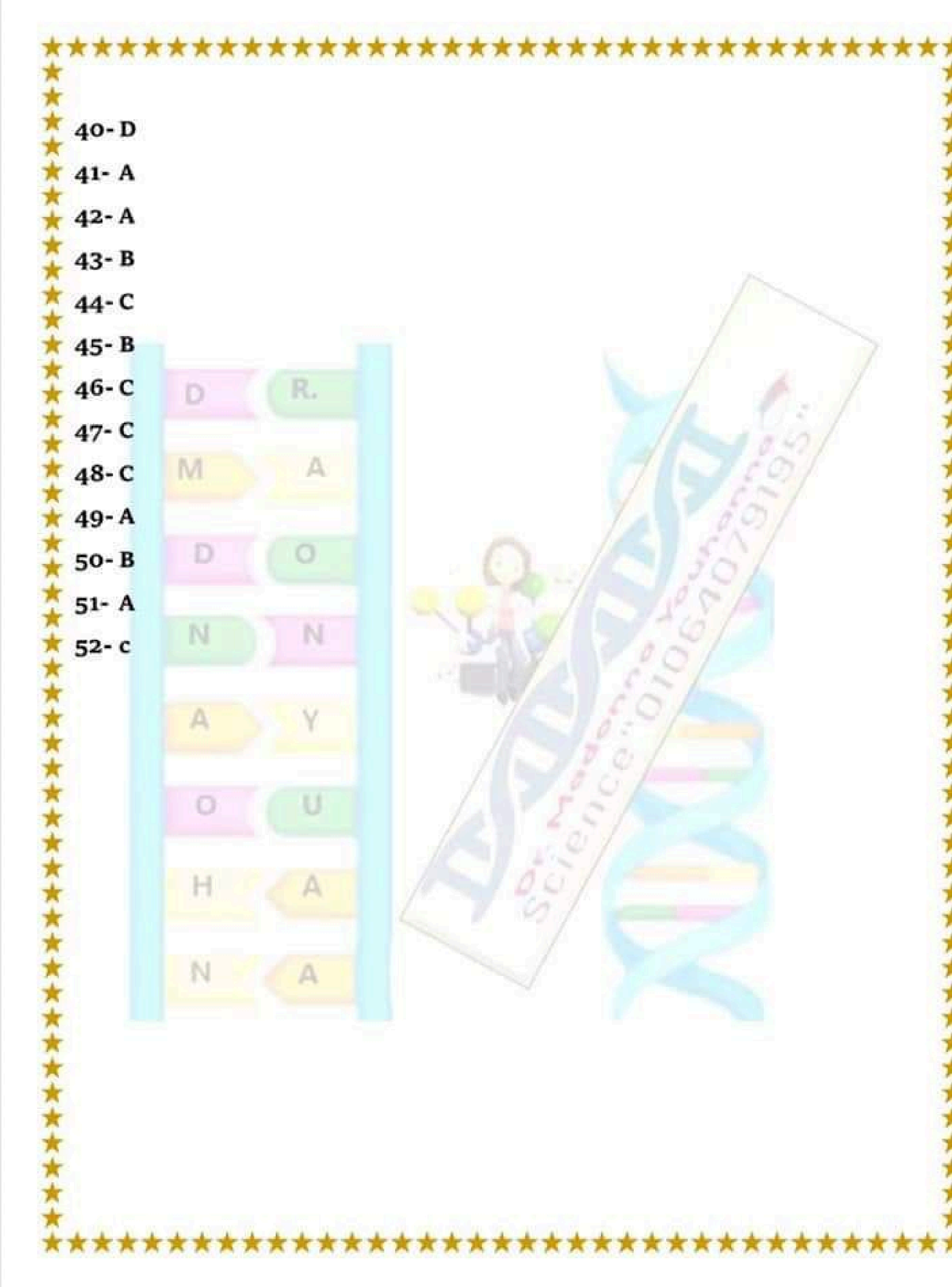


Answers

1- A
2- C
3- D
4- B
5- B
6- A
7- A
8- C
9- C
10- A
11- B
12- A
13- B
14- C



15- B
16- A
17- C
18- B
19- A
20- B
21- C
22- B
23- A
24- B
25- C
26- B
27- A
28- A
29- C
30- A
31- A
32- D
33- B
34- C
35- A
36- D
37- C
38- B
39- A



40- D

41- A

42- A

43- B

44- C

45- B

46- C

47- C

48- C

49- A

50- B

51- A

52- c



March Revision

Mr. Ahmed ElBasha

✹ Choose the right answer:

1.Lever that has the fulcrum between the force and the resistance ....

a. wheelbarrow. b. seesaw. c. nutcracker. d. tweezers.

2.In second class lever if the distance between resistance and fulcrum 15 cm ,so the distance between effort force and fulcrum must be equal ....

a. 5 cm. b. 20 cm. c. 15 cm. d. 10 cm.

3.From the second class lever is ....

a. sweet holder. b. crowbar. c. nutcracker. d. seesaw.

4.................... is a fixed point that a rigid bar rotates on.

a. Resistance b. Force c. Fulcrum d. Lever

5.All the following are from the importance of levers except ....

a. increasing force. b. increasing size. c. increasing speed.

6.................... is a type of lever that always save effort.

a. First b. Second c. Third

7.................... is considered from the third class levers.

a. Fishing hook b. Seesaw c. Bottle opener

8.All of the following are from the importance of the levers except ....

a. increasing force. b. increasing distance.

c. decreasing the speed. d. saving effort.

9.From the levers that are used to avoid danger is ....

a. coal holder. b. scissors. c. seesaw. d. wheelbarrow.

10.All of the following levers don't save effort except ....

a. ice holder. b. hockey bat. c. nutcracker.

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Whatsapp : 01003494547

11.Force arm is sometimes equal to resistance arm in .... class lever.

a. first b. second c. third

12.................... is/are used to pick up very small objects.

a. Coal holder b. Tweezers c. Manual broom d. Seesaw

13.The effort force and the resistance force are measured in ....

a. Newton. b. Hertz. c. metre. d. cubic centimetre.

14.All of the following are from the second class levers except ....

a. wheelbarrow. b. nutcracker. c. water pump.

15.From the levers that conserve effort ....

a. nutcracker. b. tweezers. c. coal holder.

16.When fulcrum is between effort force and resistance so the lever is .... lever.

a. first b. second c. third

17.Levers were first described by the Greek scientist ....

a. Archimedes. b. Newton. c. Edison. d. Galileo.

18.The resistance force is between the effort force and fulcrum in ....

a. manual broom. b. fishing hook. c. wheelbarrow. d. crowbar.

19.Levers were described by ....

a. Newton. b. Faraday. c. Archimedes.

20.The arm of resistance in the .... class lever may be equal effort arm.

a. first b. second c. third

21.The force arm is sometimes equal to the resistance arm in the .... class.

a. first b. second c. third

22.All the following are functions for levers, except ....

a. decreasing speed. b. increasing distance. c. avoiding dangers.

23.The scissors are two levers of the .... class lever.

a. first b. second c. third

24.Which of following used to avoid dangers ....

a. coal holder. b. wheelbarrow. c. manual broom. d. scissors.

25.................... is from a second class levers.

a. Scissors b. Wheelbarrow c. Manual broom

26.................... is an example of first class levers.

a. Crowbar b. Bottle opener c. Manual broom

27.Fishing tool and tweezers are considered as .... class levers.

a. first b. second c. third

28.Force x its arm = Resistance x its arm is the law of ....

a. energy. b. electricity. c. levers.

29.Which of the following levers conserve effort ....

a. fishing tool. b. sweet holder. c. wheelbarrow.

30.A lever where the resistance lies between effort force & fulcrum ....

a. nutcracker. b. scissors. c. sweet holders.

31.The .... class lever always conserve effort.

a. first b. second c. third

32................ is considered from third class levers.

a. Fish hook b. See-saw c. Nutcracker

33................ is a fixed point of a rigid bar on which the bar rotates.

a. Fulcrum b. Force of resistance c. Force of effort

34.Levers that have the force between the resistance and the fixed point ....

a. first class levers. b. second class levers. c. third class levers.

35................ class levers always do not conserve the effort.

a. First b. Second c. Third

36.The lever conserves effort if the arm of force is .... the arm of resistance.

a. longer than b. equal to c. smaller than

37.Lever that has the fulcrum between the force and the resistance ....

a. wheelbarrow. b. soda-water opener. c. see-saw.

38.The distance between the resistance and the fulcrum is known as the arm of ....

a. force b. resistance c. lever

39.Seesaw is from .... class levers.

a. first b. second c. third

40.Effort force arm is always bigger than resistance arm in the .... class levers.

a. first b. second c. third

41.Fishing tool and tweezers are considered as .... class levers.

a. first b. second c. third

42.The force arm is sometimes equal to the resistance arm in the .... class levers.

a. first b. second c. third

43................ is an example of first class lever.

a. Scissor b. Nutcracker c. Sweet holder

44.Levers of the .... class, sometimes conserve the effort.

a. first b. second c. third

45.An example of the second class lever is the ....

a. coal holder. b. wheelbarrow. c. sensitive balance.

46.A lever where the resistance lies between effort force & fulcrum ....

a. nutcracker. b. scissors. c. sweet holders.

47................ is from the second class levers.

a. Scissors b. Nutcracker c. Coal holder

48.The first class lever differs that of the second class lever in ....

a. the absence of the acted force.

b. the presence of fixed point to rest on.

c. the position of the fulcrum.

49................ is considered from third class levers.

a. Fish hook b. See-saw c. Nutcracker

50................ is a fixed point of a rigid bar on which the bar rotates.

a. Fulcrum b. Force of resistance c. Force of effort

51.Levers that have the force between the resistance and the fixed point ....

a. first class levers. b. second class levers. c. third class levers.

52.The force and resistance are equal in levers, if ....

a. force arm is longer than resistance arm.

b. force arm is shorter than resistance arm.

c. force arm is equals to resistance arm.

53.Sometimes the arm of the force equals the arm of the resistance in .... class levers.

a. first b. second c. third

54................ class levers always do not conserve the effort.

a. First b. Second c. Third

55.Effort force arm is always bigger than resistance arm in the .... class levers.

a. first b. second c. third

Model answer

1. B	**11.**A	**21.**A	**31.**B	**41.**C	**51.**C
2. B	**12.**B	**22.**A	**32.**A	**42.**A	**52.**C
3. C	**13.**A	**23.**A	**33.**A	**43.**A	**53.**A
4. C	**14.**C	**24.**A	**34.**C	**44.**A	**54.**C
5. B	**15.**A	**25.**B	**35.**C	**45.**B	**55.**B
6. B	**16.**A	**26.**A	**36.**A	**46.**A	
7. A	**17.**A	**27.**C	**37.**C	**47.**B	
8. C	**18.**C	**28.**C	**38.**B	**48.**C	
9. A	**19.**C	**29.**C	**39.**A	**49.**A	
10.C	**20.**A	**30.**A	**40.**B	**50.**A	

Choose

1- Rigid bar that rotates around a fixed point called fulcrum and affected by effort force and resistance force is called ……..

a- lever b- electric lamp c- spring scale

2- Fixed point that the lever rotates around is called ………..

a- resistance force b- fulcrum c- effort force

3- Levers in which the fixed point locates between effort force and resistance force

a- second class levers b- third class levers c- first class levers

4- All the following are from the importance of levers except ………..

a- avoid dangers b- increasing distance c- increasing size d- increasing force

5- The type of levers in which the effort force lies between the resistance force and the fulcrum is ……….

a- second class levers b- third class levers c- first class levers

6- Which of the following is a first class lever ?

a- seesaw b- nutcracker c- manual broom

7- Coal holder is used to …………..

a- increasing speed b- accuracy in performance c- avoid dangers

8- Levers in which the resistance force lies between effort force and fulcrum is ………

a- second class levers b- third class levers c- first class levers

9- All the following are third class levers except …………

a- fishing tool b- tweezers c- hockey bat d- wheelbarrow

10- The levers that sometimes saves the effort is …………

a- second class levers b- third class levers c- first class levers

11- From examples of second class levers is …………

a- bottle opener b- seesaw c- stapler d- (a) & (c)

12- Levers that never save the effort are …………

a- second class levers b- third class levers c- first class levers

13- Crowbar is used in …………

a- avoid dangers b- increasing distance c- increasing size d- increasing force

14- The measuring unit of the effort and resistance force is ………….

a- kilogram b- Newton c- centimeter

15- Which of the following always saves the effort ?

a- paddle b- nutcracker c- manual broom d- sweet holder

16- The acting force on a levers is 400N and the effort arm is 20cm , if the resistance force is 80 N so the resistance arm equals ………..

a- 100 cm b- 4 cm c- 1600 cm d- 100 N

17- A lever is used to move the force from one place to another is ………..

a- ice holder b- water pump c- crowbar d- fishing tool

18- All the following from the importance of third class levers except ……….

a- increasing speed b- saving the effort c- increasing distance d- avoid dangers

19- A lever is affected by resistance force is 50 N and the its arm is 10 cm , if the effort arm is 20 cm so the effort force equals …………

a- 25 cm b- 100 N c- 4 Cm d- 25 N

20- Levers in which the effort arm is always longer than resistance arm is ………

a- second class levers b- third class levers c- first class levers

21- Manual broom is used for ……………

a- increasing distance b- saving effort c- moving the force d- (a) & (c)

22- The first scientist who described the levers in 260 B.C was ………..

a- Faraday b- Newton c- Archimedes d- Edison

23- Which of the following is used to avoid dangers ?

a- ice holder b- crowbar c- stapler d- hockey bat

24- A type of levers in which the effort force and resistance force can be equal is ….

a- second class levers b- third class levers c- first class levers

25- All the following never save effort except …………….

a- tweezers b- manual broom c- nutcracker d- hockey bat

26- The levers conserve the effort if the resistance arm is .... the force arm .

a- shorter b- equal c- longer

27- All the following are second class levers except ....

a- stapler b- wheelbarrow c- scissors d- nutcracker

28- Resistance arm is always longer than force arm in ....

a- second class levers b- third class levers c- first class levers

29- The law of levers states that ....

a- Effort force + effort arm = resistance force + resistance arm

b- Effort force - effort arm = resistance force - resistance arm

c- Effort force X effort arm = resistance force X resistance arm

30- Force resulted from the weight of the body that we want to move is ....

a- effort force b- magnetic force c- gravitational force d- resistance force

31- Effort force is always smaller than resistance force in ....

a- seesaw b- crowbar b- manual broom d- nutcracker

32- Levers that always conserve the effort are ....

a- second class levers b- third class levers c- first class levers

33- Force exerted by a person to equilibrate the resistance is ....

a- effort force b- magnetic force c- gravitational force

34- a lever sometimes saves the effort is ....

a- nutcracker b- manual broom c- crowbar d- wheelbarrow

35- All the following are first class levers except ....

a- pincer b- nail clipper c- tweezers d- hammer claw

36- First class levers differ from second class levers in ....

a- the presence of fixed point

b- the presence of effort force

c- the position of fulcrum

d- the absence of resistance force

March Revision Prim 6

Choose the correct answer:

1. The most common simple machines are ………………….

a. levers. b. bicycles. c. car machines. d. (a), (b) and (c).

2.The lever rotates around a fixed point called……………………

a. resistance force. b. fulcrum. c. effort force. d. a rigid bar.

3.Levers were first described in 260 B.C by the Greek scientist……………………

a. Archimedes. b. El-Hassan Ibn El-Haitham. c. Newton. d. Mendel.

4…………………... is a rigid bar that rotates around fulcrum, and is affected by an effort force and a resistance force.

a. Lever b. Solution c. Mixture d. Friction force

5.The …………….force is exerted by a person to equilibrate the resistance.

a. fulcrum b. effort c. friction d. (a) and (b)

6.Any lever consists of………………

a. a resistance force (R). b. an effort force (F).
c. a fulcrum (O). d. (a) , (b) and (c).

7.All the following are from the importance of levers except ………………..

a. increasing speed. b. increasing force.
c. increasing size. d. accuracy in performance.

8……………….. is a lever that uses a small force to make a great effort.

a. Crowbar b. Hockey bat c. Ice holder d. Manual broom

9…………………… increases the speed of objects that we affect them.

a. Manual broom b. Seesaw c. Hockey bat d. Coal holder

10.Tweezers are used to……………………………..

a. move a heavy load. b. increase the speed of the ball.
c. pick up very small objects. d. hold the cold materials.

11.Which of the following levers is used to avoid dangers ?

a. Coal holder. b. Scissors. c. Seesaw. d. Manual broom.

12. Which of the levers derived is used to enlarge the distance

a. The tweezers. b. Crowbar. c. The broom. d. Coal holder.

13. Which of the following levers moves force from one place to another ?

a. Wheelbarrow. b. Nutcracker. c. Manual broom. d. Pincers.

14. The opposite figure represents the…………..lever.

a. first class
b. second class
c. third class
d. fourth class

F
Effort Force
R
Resistance Force
O
Fulcrum

15. The levers that have the fixed point (fulcrum) between the resistance force and effort force are……………………

a. first class levers.　　b. third class levers.

c. second class levers.　　d. fourth class levers.

16. From the first class levers is……………………….

a. nutcracker.　　b. sweet holder.　　c. scissors.　　d. manual broom.

17…………………have the resistance force between the effort force and fulcrum.

a. Third class levers　　b. First class levers

c. Second class levers　　d. (a), (b) and (c)

18.Soda water opener is a…………………………..

a. first class lever.　　b. second class lever.

c. fourth class lever.　　d. third class lever.

19.The 1st class lever differs from the 2nd class lever in…………………

a. the absence of the effort force.　　b. the presence of a fixed point.

c. the position of fulcrum.　　d. (a) and (b).

20. Which of the following figures represents the third class lever?

a. F Effort Force, R Resistance Force, Fulcrum

b. R Resistance Force, F Effort Force, Fulcrum

c. R Resistance Force, F Effort Force, Fulcrum

d. F Effort Force, R Resistance Force, Fulcrum

21. ………………………are from the second class levers.

a. Nutcracker, wheelbarrow and bottle opener

b. Sweet holder, wheelbarrow and soda water opener

c. Tweezers, hockey bat and manual broom

d. Paddle, pincers and scissors

22. Which of the following is a 2nd class lever?

a. Sweet holder.　　b. Wheelbarrow.　　c. Seesaw.　　d. Hockey bat.

23. ……………………have the effort force between the resistance force and fulcrum.

a. Third class levers　　b. First class levers　　c. Second class levers　　d. (b) and (c)

24. The effort force is between the resistance and fulcrum in

a. nutcracker.　　b. scissors.　　c. sweet holder.　　d. crowbar.

25. ……………..is a lever from the 3rd order.

a. Sweet holder　　b. Scissors　　c. Nutcracker　　d. Nail clippers

26. All the following are from the 3rd class levers except………………..

a. wheelbarrow.　　b. fishing tool.　　c. manual broom.　　d. sweet holder.

27. Wheelbarrow is considered from …………………class levers.

a. first　　b. second　　c. third　　d. fourth

28. All the following are from the first class levers except

a. the crowbar.　　b. the scissors.　　c. nutcrackers.　　d. the seesaw.

29. Crowbar is considered from ……………………..class levers.

a. first b. second c. third d. fourth

30. The law of levers states that ……………………

a. force x its arm = resistance x its arm. b. force ÷ its arm = resistance ÷ its arm.
c. force + its arm = resistance + its arm. d. force x its arm = resistance + its arm.

31. The values of effort and resistance in the lever depend on …………………

a. the arm of force. b. the arm of resistance. c. the position of fulcrum. d. (a) and (b).

32. The distance between the effort force and fulcrum is ……………………

a. the effort force. b. the resistance arm.
c. the effort force arm. d. the resistance force.

33. The distance between the resistance force and fulcrum is ………………

a. the arm of force. b. the arm of resistance.
c. the arm of force — arm of resistance. d. the arm of force + arm of resistance.

34.When the arm of force is longer than the arm of resistance, the effort force is …………….the resistance.

a. larger than b. smaller than c. equal to d. double

35.When the arm of force ....the arm of resistance, the effort force equals the resistance force.

a. > b. < c. = d. ≠

36.When the arm of force ……….the arm of resistance, the lever doesn't conserve effort.

a. is shorter than b. is longer than c. equals d. (a) and (c)

37.When the arm of force equals 4 cm. and the arm of resistance equals 4 cm , so…………….

a. the effort force = the resistance force.
b. the effort force > the resistance force.
c. the resistance force < the effort force.
d. the effort force < the resistance force.

38. The lever doesn't save effort when………………..

a. the effort arm is longer than the resistance arm.
b. the effort arm is shorter than the resistance arm.
c. the effort force is larger than the resistance force.
d. (b) and (c).

39. The effort force and resistance force are measured in……………..

a. Newton. b. meter. c. centimeter. d. Hertz.

40. Force arm is sometimes equal to resistance arm in ………………class levers.

a. first b. second c. third d. first and third

41. The type of levers which sometimes has a mechanical benefit is the ………………

a. first class levers. b. second class levers. c. third class levers. d. fourth class levers.

42. The type of levers which always doesn't save effort is the …………………..

a. first class levers. b. third class levers. c. second class levers. d. fourth class levers.

43. The type of levers which always has a mechanical benefit is the ………………

a. first class levers. b. second class levers. c. third class levers. d. fourth class levers.

44. When the effort arm equals 5 cm. and the resistance arm equals 10 cm., so……………

a. the type of lever may be a first class lever.
b. the effort force is larger than the resistance force.
c. the type of lever may be a third class lever.
d. (a), (b) and (c).

45. Which of the following levers saves effort ?

a. Scissors. b. Nutcracker c. Fishing tool. d. Sweet holder.

46. When the length of the force arm equals 2.5 meter and the length of the resistance arm equals 1.5 meter, so …………………..

a. the resistance force is larger than the effort force.
b. the lever has a mechanical benefit.
c. this lever saves effort.
d. (a), (b) and (c).

47. Which of the following levers doesn't save effort?

a. Coal holder. b. Nutcracker. c. Wheelbarrow. d. Bottle opener.

48. Which of the following levers has the arm of force longer than the arm of resistance?

a. Manual broom. b. Ice holder. c. Soda water opener. d. Tweezers.

49. All the following levers don't save effort except………………

a. nutcracker. b. ice holder. c. fishing tool. d. hockey bat.

(A)	(B)
1. Lever.	a. A force that is applied by a person to overcome the resistance.
2. Third class levers.	b. They have the resistance between effort force and fulcrum.
3. Fulcrum.	c. A fixed point at which the lever rotates.
4. First class levers.	d. A rigid bar rotates around a fixed point and is affected by an effort force **(F)** and a resistance **(R).**
5. Second class levers.	e. They have the fulcrum between the resistance and effort force.
6. Effort force.	f. They have the effort force between **(O)** and **(R).**

1………… 2……… 3……….. 4……….. 5……….. 6………..

(A)	(B)
1. First class levers.	a. Levers that always conserve effort.
2. Second class levers.	b. Levers that do not conserve effort.
3. Third class levers.	c. Levers that sometimes conserve effort.
4. Levers.	d. A fixed point that a rigid bar rotates around.
5. The resistance.	e. A rigid bar rotates around a fixed point, and is affected by a force and a resistance.
6. The fulcrum.	f. A force that is resulted from the body that we want to move.

1………… 2. ……… 3……….. 4……….. 5……….. 6………..

1 unit 1 lesson 1 Types of levers

* Choose The correct answer :-

1 - The most common simple machines are.....(**levers**- bicycles– car machines-a,b,c)

*2- levers were first described by the Greek scientist.(**Archimedes** – Newton- Edison)

*3 - .... is rigid bar that rotates around fulcrum, and is affected by an

effort force and a resistance force (**lever** - solution - mixture- friction force)

*4- The lever rotates around a fixed point called .....(resistance force - **fulcrum** - effort force)

*5- ....is a fixed point that a rigid bar rotates on. (resistance - force - **fulcrum** - lever)

*6- When fulcrum is between effort force and resistance so the lever is.......class lever.

(**first** - second - third)

*7-Second class lever,..........in the middle. (fulcrum- effort force- **resistance force**)

*8- The force that is exerted to equilibrium is called.........(fulcrum – **effort** – friction)

*9-The .....force is exerted by a person to equilibrate the resistance.

(fulcrum - **effort** - friction - a,b)

*10-Any lever consists of ....(a resistance force R- an effort force f- a fulcrum O- **a,b,c**)

*11-All the following are from the importance of levers except........

(increasing speed - increasing force - **increasing size** – accuracy performance)

📖12. All the following are from the importance of levers except (increasing speed –

increasing force – **increasing size** – accuracy in performance)

*13- All of following are from the importance of the levers except….

(increasing force - increasing distance - **decreasing the speed** - saving effort)

*14- All of the following are from the second class levers except……….(wheelbarrow - nutcracker - **water pump**)

📖15. From the first class levers is …….(nutcracker – sweet holder – **scissors** – manual broom)

📖16. The 1st class lever differs from the 2nd class level in …………..(the absence of the effort force- the presence of a fixed point – **the position of fulcrum** –a)and b)

📖17. Which of the following is a 2nd class lever ?(sweet holder –**wheelbarrow** – seesaw – hockey bat)

18- From the levers that are used to avoid danger is…….

(**coal holder** – scissors - seesaw – wheelbarrow)

19- ……is used to pick up very small objects(coal holder-**tweezers** -manual broom - seesaw)

📖20. The effort is between the resistance and fulcrum in …..(nutcracker – scissors – **sweet holder** – crowbar)

📖21-……..is a lever from the 3rd order (**sweet holder** –scissors – nutcracker – nail clippers)

📖22.All the following are from the 3rd class levers except ………(**wheelbarrow** – fishing tool – manual broom – sweet holder)

23 ……..class levers are levers that always save offers. (first - **second** - third)

24- From the levers that conserve effort……. (**nutcracker** - tweezers - coal holder)

25- The resistance force is between the effort force and fulcrum in……. (manual broom- crowbar- **wheelbarrow**- fishing hook)

26- From the second class lever is…….. (sweet holder - crowbar - **nutcracker** - seesaw)

27- ………is considered from the third class levers. (**fishing hook** - seesaw – bottle opener)

28-……..is a lever that uses a small force to make a great effort

(**crowbar** -hockey bat - ice holder - manual broom)

*29- …….increases the speed of objects that we affect them.

(manual broom - seesaw - **hockey bat** - coal holder)

*30- Tweezers are used to ……..(move a heavy load - Increases the speed of the ball- **pick up very small objects** - hold the cold materials)

*31- Which of the following levers is used to avoid dangers?

(**coal holder** - scissors- seesaw - manual broom)

*32- Which of the levers derived is used to enlarge the distance?

(the tweezers - crowbar - **the broom** - coal holder)

*33- Which of the following levers moves force from one place to another?

(wheelbarrow - nutcracker - **manual broom** - pincers)

*34- The levers that have the fixed point (fulcrum)between the resistance force and effort force are…….(**first class levers** - second class levers - third class levers - fourthclass levers)

*35- From the first class levers is ……….(nutcracker-sweet holder -**scissors** -manua broom)

*36- .....have the resistance force between the effort force and fulcrum.

(third class levers - first class levers - **second class levers** - a,b,c)

*37- Soda water opener is a .....(first class lever - **second class lever** - third class lever)

*38- The 1st class lever differs from the 2nd class lever in. ....

(the absence of the effort force - the presence of a fixed point – **the position of fulcrum**)

*39- ....are from the second class lever.(**nutcracker, wheelbarrow and bottle opener** - sweet holder ,wheelbarrow and soda water opener)

*40- Which of the following is a 2nd class lever(sweet holder- **wheelbarrow**- seesaw)

*41- ....have the effort force between the resistance force and fulcrum. (**third class levers**- first class levers - second class levers - b,c)

*42- The effort force is between the resistance and fulcrum in........

(nutcracker- scissors - **sweet holder** - crowbar)

*43- ......is a lever from the 3rd order. (**sweet holder** - scissors - nutcracker - nail clippers)

*44- All the following are from the 3rd class levers except......

(**wheelbarrow**- fishing tool - manual broom - sweet holder)

*45- Wheelbarrow is considered from....class levers (first- **second** - third- fourth)

*46- All the following are from the first class levers except..........

(the crowbar- the scissors - **nutcracker** - the seesaw)

47- Crowbar is considered from......... class levers. (**first** - second - third – fourth)

2Law of levers

Q Choose:-

*1- the effort force and resistance force are measured in(**Newton-** metre - cm - hertz)

📖2. The exerted force of the first class lever equals 500 Newton and the length of its arm is 20 cm . and is affected by a resistance with a value of 200 Newton the length of the arm of the resistance is ……….(20-55-**50**-60)cm

☺ Force × its arm = resistance × its arm

500 × 20 = 200 × its arm

Arm of resistance = $\frac{500\times20}{200}$ **= 50 cm**

📖3. The length of the force arm of a first class lever is 5 cm . and the length of the arm resistance is 15 cm . if the resistance has a value of 300 Newton, the value of the affecting force is ……..(**900**-600-300-15)cm

☺Effort force × its arm = resistance × its arm

Effort force × 5 = 300 × 15

Effort force = $\frac{300\times15}{5}$ **= 900 Newton**

📖4. The effecting force on a second class lever equal 200 Newton and the length of its arm is 50 cm ,if the value of the resistance 1000 Newton , the value of the resistance arm is …….(60-500-**10**-125) cm

☺Effort force × its arm = resistance × its arm

200 × 50 = 1000 × its arm

Arm of resistance = $\frac{200\times50}{1000}$ **= 10 cm**

📖5. In a 2nd class lever, the effort force is 100 Newton , length of the force arm = 25 cm and the resistance= 500 Newton , the resistance arm is …………… (52-64-**5**-20) cm

☺Effort force × its arm = resistance × its arm

100 × 25 = 500 × its arm

The resistance arm = $\frac{100\times25}{500}$ **= 5 cm**

📖6. A second class lever where the effort force = 200 Newton ,the force arm = 50 cm and the resistance force = 100 Newton , the length of the resistance arm is …….(**10**-20-30-50)cm

☺Effort force × its arm = resistance × its arm

200 × 50 = 100 × its arm

Arm of resistance = $\frac{200\times50}{100}$ **= 10 cm**

* 7- in second lever if the distance between resistance and fulcrum 15 cm so the distance between effort force and fulcrum must be equal……… (5cm - **20cm** - 15cm - 10cm)

📖8. Force arm is sometimes equal to resistance arm in ……..class levers

(**first** – second –third – first and third)

📖9. Which of the following levers saves effort? (scissors – **nutcracker** – fishing tool – sweet holder)

10- All of the following levers don't save offers except…(ice holder- hockey bat -**nutcracker**)

*11- The arm of resistance in the……Class lever may be equal effort arm (**first-** second - third)

1 unit 1 lesson 1 Types of levers

* Choose The correct answer :-

1 - The most common simple machines are.....(levers- bicycles– car machines-a,b,c)

*2- levers were first described by the Greek scientist.(Archimedes – Newton- Edison)

*3 - .... is rigid bar that rotates around fulcrum, and is affected by an

effort force and a resistance force (lever - solution - mixture- friction force)

*4- The lever rotates around a fixed point called .....(resistance force - fulcrum - effort force)

*5- ....is a fixed point that a rigid bar rotates on. (resistance - force - fulcrum - lever)

*6- When fulcrum is between effort force and resistance so the lever is.......class lever.

(first - second - third)

*7-Second class lever,...........in the middle. (fulcrum- effort force- resistance force)

*8- The force that is exerted to equilibrium is called.........(fulcrum – effort – friction)

*9-The .....force is exerted by a person to equilibrate the resistance.

(fulcrum - effort - friction - a,b)

*10-Any lever consists of ....(a resistance force R- an effort force f- a fulcrum O- a,b,c)

*11-All the following are from the importance of levers except........

(increasing speed - increasing force - increasing size – accuracy performance)

🕮12. All the following are from the importance of levers except (increasing speed – increasing force – increasing size – accuracy in performance)

*13- All of following are from the importance of the levers except....

(increasing force - increasing distance - decreasing the speed - saving effort)

*14- All of the following are from the second class levers except……….(wheelbarrow - nutcracker - water pump)

🕮15. From the first class levers is …….(nutcracker – sweet holder – scissors – manual broom)

🕮16. The 1st class lever differs from the 2nd class level in ……………(the absence of the effort force- the presence of a fixed point – the position of fulcrum –a)and b)

🕮17. Which of the following is a 2nd class lever ?(sweet holder –wheelbarrow – seesaw – hockey bat)

18- From the levers that are used to avoid danger is…….

(coal holder – scissors - seesaw – wheelbarrow)

19- ……is used to pick up very small objects(coal holder-tweezers -manual broom - seesaw)

🕮20. The effort is between the resistance and fulcrum in …..(nutcracker – scissors – sweet holder – crowbar)

🕮21-……..is a lever from the 3rd order (sweet holder –scissors – nutcracker – nail clippers)

🕮22.All the following are from the 3rd class levers except ………(wheelbarrow – fishing tool – manual broom – sweet holder)

23 ……..class levers are levers that always save offers. (first - second - third)

24- From the levers that conserve effort……. (nutcracker - tweezers - coal holder)

25- The resistance force is between the effort force and fulcrum in……. (manual broom- crowbar- wheelbarrow- fishing hook)

26- From the second class lever is…….. (sweet holder - crowbar - nutcracker - seesaw)

27- ………is considered from the third class levers. (fishing hook - seesaw – bottle opener)

28-........is a lever that uses a small force to make a great effort

(crowbar -hockey bat - ice holder - manual broom)

*29- ....increases the speed of objects that we affect them.

(manual broom - seesaw - hockey bat - coal holder)

*30- Tweezers are used to ....(move a heavy load - Increases the speed of the ball- pick up very small objects - hold the cold materials)

*31- Which of the following levers is used to avoid dangers?

(coal holder - scissors- seesaw - manual broom)

*32- Which of the levers derived is used to enlarge the distance?

(the tweezers - crowbar - the broom - coal holder)

*33- Which of the following levers moves force from one place to another?

(wheelbarrow - nutcracker - manual broom - pincers)

*34- The levers that have the fixed point (fulcrum)between the resistance force and effort force are.......(first class levers - second class levers - third class levers - fourthclass levers)

*35- From the first class levers is ....(nutcracker-sweet holder -scissors -manua broom)

*36- .....have the resistance force between the effort force and fulcrum.

(third class levers - first class levers - second class levers - a,b,c)

*37- Soda water opener is a .....(first class lever - second class lever - third class lever)

*38- The 1st class lever differs from the 2nd class lever in. ....

(the absence of the effort force - the presence of a fixed point – the position of fulcrum)

*39- ....are from the second class lever.(nutcracker, wheelbarrow and bottle opener - sweet holder ,wheelbarrow and soda water opener)

*40- Which of the following is a 2nd class lever(sweet holder- wheelbarrow- seesaw)

*41- ....have the effort force between the resistance force and fulcrum. (third class levers- first class levers - second class levers - b,c)

*42- The effort force is between the resistance and fulcrum in........

(nutcracker- scissors - sweet holder - crowbar)

*43- ......is a lever from the 3rd order. (sweet holder - scissors - nutcracker - nail clippers)

*44- All the following are from the 3rd class levers except......

(wheelbarrow- fishing tool - manual broom - sweet holder)

*45- Wheelbarrow is considered from....class levers (first- second - third- fourth)

*46- All the following are from the first class levers except..........

(the crowbar- the scissors - nutcracker - the seesaw)

47- Crowbar is considered from......... class levers. (first - second - third – fourth)

2Law of levers

Q Choose:-

*1- the effort force and resistance force are measured in(Newton- metre - cm - hertz)

📖2. The exerted force of the first class lever equals 500 Newton and the length of its arm is 20 cm . and is affected by a resistance with a value of 200 Newton the length of the arm of the resistance is ……….(20-55-50-60)cm

📖3. The length of the force arm of a first class lever is 5 cm . and the length of the arm resistance is 15 cm . if the resistance has a value of 300 Newton, the value of the affecting force is ……..(900-600-300-15)cm

📖4. The effecting force on a second class lever equal 200 Newton and the length of its arm is 50 cm ,if the value of the resistance 1000 Newton , the value of the resistance arm is …….(60-500-10-125) cm

📖5. In a 2^{nd} class lever, the effort force is 100 Newton , length of the force arm = 25 cm and the resistance= 500 Newton , the resistance arm is ……………. (52-64-5-20) cm

📖6. A second class lever where the effort force = 200 Newton ,the force arm = 5 cm and the resistance force = 100 Newton , the length of the resistance arm is …….(10-20-30-50)cm

* 7- in second lever if the distance between resistance and fulcrum 15 cm so the distance between effort force and fulcrum must be equal……… (5cm - 20cm - 15cm - 10cm)

📖8. Force arm is sometimes equal to resistance arm in ……..class levers

(first – second –third – first and third)

📖9. Which of the following levers saves effort? (scissors – nutcracker – fishing tool – sweet holder)

10- All of the following levers don't save offers except…(ice holder- hockey bat -nutcracker)

*11- The arm of resistance in the……Class lever may be equal effort arm (first- second - third)

Grade 6 Science Models

Model 1

Choose the correct answers :-

1 - The most common simple machines are…(levers- bicycle -car machines-a,b,c)

2-Second class lever……..in the middle(fulcrum- effort force- resistance force)

3- Which of the following levers saves effort? (scissors – nutcracker – fishing tool – sweet holder)

4- The exerted force of the first class lever equals 500 Newton and the length of its arm is 20 cm . and is affected by a resistance with a value of 200 Newton the length of the arm of the resistance is ……….(20-55-50-60)cm

The answers:- 1- levers 2- resistance force 3-nutcracker

4-☺ **Force × its arm = resistance × its arm**

500 × 20 = 200 × its arm

Arm of resistance = $\frac{500\times20}{200}$ **= 50 cm**

Model 2

Choose the correct answers :-

1- levers were first described by the Greek scientist (Archimedes – Newton- Edison)

2 - .... is rigid bar that rotates around fulcrum, and is affected by an

effort force and a resistance force (lever - solution - mixture- friction force)

3- ....have the effort force between the resistance force and

fulcrum. (third class levers- first class levers - second class levers - b,c)

4- The effort force is between the resistance and fulcrum in........

(nutcracker- scissors - sweet holder - crowbar)

The answers:-

1- Archimedes **2- lever** **3- third class levers** **4- sweet holder**

Model 3

Choose the correct answers :-

1- The lever rotates around a fixed point called …..(resistance force - fulcrum - effort force)

2- When fulcrum is between effort force and resistance so the lever is…….class lever. (first - second - third)

3- …….increases the speed of objects that we affect them.

(manual broom - seesaw - hockey bat - coal holder)

4-All the following are from the importance of levers except…….

(increasing speed - increasing force - increasing size – accuracy performance)

The answers:-

1- Fulcrum   2- first   3- hockey bat   4- increase size

Model 4

Choose the correct answers :-

1-All the following are from the importance of levers except (increasing speed – increasing force – increasing size – accuracy in performance)

2-From the first class levers is …….(nutcracker – sweet holder – scissors – manual broom)

3- All of the following levers don't save offers except…(ice holder- hockey bat - nutcracker)

4- The length of the force arm of a first class lever is 5 cm . and the length of the arm resistance is 15 cm . if the resistance has a value of 300 Newton, the value of the affecting force is ……..(900-600-300-15)cm

The answers:-

1- Increase size 2- scissors 3- nutcracker

4-Effort force × its arm = resistance × its arm

Effort force × 5 = 300 × 15

Effort force = $\frac{300\times15}{5}$ = 900 Newton

Model 5

Choose the correct answers :-

1- Which of the levers derived is used to enlarge the distance?

(the tweezers - crowbar - the broom - coal holder)

2- From the first class levers is(nutcracker-sweet holder-scissors -manualbroom)

3- the effort force and resistance force are measured in(Newton- metre - cm - hertz)

4. In a 2nd class lever, the effort force is 100 Newton , length of the force arm = 25 cm and the resistance= 500 Newton , the resistance arm is …………… (52-64-5-20) cm

The answers:-

1- The broom 2- scissors 3- newton

4-☺Effort force × its arm = resistance × its arm

100 × 25 = 500 × its arm

The resistance arm = $\frac{100 \times 25}{500}$ = 5 cm

1. **Fishing tool and tweezers are considered as.................class levers.**
   a. first b. second c. third

2. **The force arm is sometimes equal to the resistance arm in the................class levers.**
   a. first b. second c. third

3. **is an example of first class lever.**
   a. Scissor b. Nutcracker c. Sweet holder

4. **Force x its arm = Resistance x its arm is the law of** ....
   a. energy. b. electricity. c. levers.

5. **Which of the following levers conserve effort ....**
   a. fishing tool. b. sweet holder. c. wheelbarrow.

6. **Levers of the ....class, sometimes conserve the effort.**
   a. first b. second c. third

7. **An example of the second class lever is the** ....
   a. coal holder. b. wheelbarrow. c. sensitive balance

8. **A lever where the resistance lies between effort force & fulcrum** ....
   a. nutcracker. b. scissors. c. sweet holders.

9. **is from the second class levers.**
   a. Scissors b. Nutcracker c. Coal holder

10. **The first class lever differs that of the second class lever in** ....
    a. the absence of the acted force.
    b. the presence of fixed point to rest on.
    c. the position of the fulcrum.

11. **is a fixed point of a rigid bar on which the bar rotates.**
    a. Fulcrum b. Force of resistance c. Force of effort

12. **Levers that have the force between the resistance and the fixed point** ....
    a. first class levers. b. second class levers. c. third class levers.

13.The force and resistance are equal in levers, if ....

a. force arm is longer than resistance arm.

b. force arm is shorter than resistance arm.

c. force arm is equals to resistance arm.

14.Sometimes the arm of the force equals the arm of the resistance in…….class

a. first b. second c. third

15. class levers always do not conserve the effort.

a. First b. Second c. Third

16.The lever conserves effort if the arm of force is................the arm of resistance.

a. longer than b. equal to c. smaller than

17.Lever that has the fulcrum between the force and the resistance ....

a. wheelbarrow. b. soda-water opener. c. see-saw.

18.The distance between the resistance and the fulcrum is known as the arm of ....

a. force b. resistance c. lever

19.Seesaw is from ....class levers.

a. first b. second c. third

20.Effort force arm is always bigger than resistance arm in the................class levers.

a. first b. second c. third

21. from the levers which Avoid dangers

a. Scissors b. Nutcracker c. Coal holder

22. Transferring force from one place to another:

a. Manual broom b. Nutcracker c. Coal holder

23.from the levers which Catching things accurately.

a. Manual broom b. Nutcracke c. tweezer

24.from the levers which Increasing speed.

a.Manual broom b. hokey bat c. tweezer

25.from the which Saving effort.

a.Manual broom b. hokey bat c. wheel barrow

26.from the which Increasing force.

a.Manual broom b. Nutcracker c. Coal holder

27.from the which Increasing distance.

a.Manual broom b. Nutcracker c. Coal holder

28.In a third class lever, if the length of the force arm equals 5 cm, and the length of resistance arm equals 15 cm. if the resistance equals 300 newton. Calculate the valueof effort force .

a.300 b. 900 c. 1500

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

29- The length of the force arm of a third class lever is 10 cm. and the length of the arm of resistance is 20 cm. find the resistance, if the value of the affecting force is 30 N.

a.10 b. 20 c. 15

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

30- Calculate the length of the resistance arm that causes the balance of the lever. If you know that the length of the force arm is 2 cm, the hanging force is 8 Newton and the resistance is 4 Newton.

a.2 b. 3 c. 4

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

31.Ice holder is from .... class levers.

a. first b. second c. third

32.if Effort force arm is equal resistance arm in the…………class levers.

a. first b. second c. third

33. from the levers which save effort ………….

a. Scissors b. Nutcracker c. Coal holder

34. ……From levers that increase distance .

a. Manual broom b. Nutcracker c. Coal holder

35.from the levers which used to transferring force .

a. Manual broom b. Nutcracke c. tweezer

36.from the levers which Increasing speed.

a.Manual broom b. hokey bat c. tweezer

37.from the which Saving effort.

a.Manual broom b. hokey bat c. bottle opener

38.from the which Increasing force.

a.Manual broom b. stabler c. Coal holder

39- the distance between the force and the fulcrum is called ……………..

a.arm of force b. arm of resistance c. fulcrum arm

40. the distance between the resistance and the fulcrum is called ……………

a.arm of force b. arm of resistance c. fulcrum arm

41- The fixed point of a rigid bar on which the bar rotates.

a. force b. resistance c. fulcrum

42- A rigid bar rotating around a fulcrum and is affected by the effort force and the resistance force.

a. lever b. resistance c. fulcrum

43- The type of levers that always save effort.

a. first b. second c. third

44. **The type of levers that never save effort.**

a. first b. second c. third

45. **The type of levers that sometimes save effort.**

a. first b. second c. third

46. The type of levers where the effort force is always smaller than the resistance force.

a. first b. second c. third

47- the type of this lever is ………………….

a. first b. second c. third

47- the type of this lever is ………………….

a. first b. second c. third

48- what is the importance of this lever ………………….

a. increase force b. avoids dangerous c. Increase speed

s

49- the type of this lever is ………………….

a. first b. second c. third

50- Force x its arm = ……………… x its arm

a. force b. resistance c. lever

model answer

1-c	13-c	25-c	37-c
2-a	14-a	26-b	38-b
3-a	15c	27- a	39-a
4-c	16-a	28-b	40-b
5- c	17-c	29-c	41-c
6- a	18-b	30-c	42-a
7-b	19-a	31-c	43-b
8-a	20-b	32-a	44-c
9-b	21-c	33-b	45-a
10-c	22-a	34-a	46-c
11-a	23-c	35-a	47-b
12-c	24-b	36-b	48-c
			49-b
			50-b

CHOOSE THE CORRECT ANSWER

1-....................is a third class lever

(manual broom – crowbar – nutcracker)

2-...............is the lever that increase speed

(hockey bat – nutcracker – manual broom)

3-seesaw is ....lever

(first – second – third)

4-the fulcrum is between the force and resistance in ....lever (first – second – third)

5-...............is the second class lever

(scissors – wheelbarrow – manual broom)

6-.............is a first class lever

(crowbar – bottle opener – manual broom)

7-sweet holder is ....class lever

(first – second – third)

8-.....................lever always save effort

(first – second – third)

9-.....................lever always doesn't save effort

(first – second – third)

10-force arm is sometimes equal to the resistance arm in the ....class lever (first – second – third)

11-all of these levers are third class except ....

(crowbar - hockey bat- fishing tool

12-which of the following a second class lever ....

(seesaw – wheelbarrow – sweet holder)

13-from levers which conserve effort is ....

(manual broom – tweezers – wheelbarrow)

14-which lever doesn't conserve effort ....

(wheelbarrow – nutcracker – manual broom)

15-.............is a fixed point in which rigid bar rotates

(force – fulcrum – resistance)

16-the resistance force is between force and fulcrum

(first – second – third)

17-............pick up small things

(tweezers – pincer – bottle opener)

18-...............is a first class lever

(wheelbarrow – plier – manual broom)

19- ....class lever is sometimes save effort

(first – second – third)

20-the first scientist had described levers is ......

(Archimedes – Newton – Mendel)

21-..............increases distance

(manual broom- nutcracker – plier)

22- if force arm is longer than resistance arm ,lever ....

(save effort – sometimes save effort –don't save effort) 22- if force arm is shorter than resistance arm ,lever ....

(save effort – sometimes save effort –don't save effort)

*A second class lever ,its effort force is 100 newton ,its arm is 200 cm ,and affected by resistance force 500 N find resistance arm